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Charles T. Poston, PE
Rebuttal Testimony
File Nos. ER-2022-0129 & ER-2022-0130C

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MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENGINEERING ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

CHARLES T. POSTON, PE

Evergy Metro, Inc. d/b/a Evergy Missouri Metro
Case No. ER-2022-0129

Evergy Missouri West, Inc. d/b/a Evergy Missouri West
Case No. ER-2022-0130

Jefferson City, Missouri
July 2022

****** Denotes Confidential Information ******

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Evergy Missouri West, Inc. d/b/a Evergy Missouri West
Case No. ER-2022-0130

Q. Please state your name and business address.

A. My name is Charles T. Poston and my business address is 200 Madison Street, Jefferson City, MO, 65102.

Q. By whom are you employed and in what capacity?

A. I am a Senior Professional Engineer employed by the Missouri Public Service Commission ("Commission") in the Engineering Analysis Department, a part of the Commission Staff ("Staff").

Q. Are you the same Charles T. Poston who filed direct testimony in these cases on June 8, 2022?

A. Yes, I am.

EXECUTIVE SUMMARY

Q. What is the purpose of your rebuttal testimony?

A. I will provide rebuttal testimony concerning the market prices used in the production cost models described by Evergy witness Eric T. Peterson.

Q. Please summarize Staff's findings related to the market prices used in the production cost models used by Evergy Metro and Evergy West.

A. Staff's review found that the market prices used by Evergy Metro and Evergy West in their production cost models appear to be too low given current market conditions. As a result, the results of the production cost models used by Evergy Metro and Evergy West may not properly account for fuel and purchased power expenses.

MARKET PRICES

Q. What are market prices?

A. In the context of this testimony, market prices represent the cost to buy and sell energy in an integrated marketplace such as the Southwest Power Pool ("SPP").

Q. What is a production cost model?

A. A production cost model is a computer simulation of a utility's energy generation, energy sales, and energy purchases. The results of production cost modeling are used to calculate variable fuel and purchased power expense.

Q. What purpose do market prices have in production cost modeling?

A. Within a production cost model, market prices affect the dispatch of coal and natural gas-fired power plants, determine the revenue earned for the sale of energy generated at all types of power plants, and govern the cost of the energy purchased by a utility to meet the obligation to serve its customers' load.

Q. Do Staff, Evergy Metro, and Evergy West use the same methods to generate market price input files for use in their production cost models?

A. No.

Q. What method did Staff use to generate the market price input files for its production cost models?

A. Staff witness Saeid R. Dinarloo stated in his direct testimony that, "Staff used the SPP's [day-ahead locational marginal prices] for the three-year period ending December 31, 2021, and calculated hourly averages for every settlement node where Evergy buys or sells electricity through SPP's [integrated marketplace]."[1]

Q. What method did Evergy Metro and Evergy West use to generate the market price input files for their production cost models?

A. Evergy witness Eric T. Peterson states in his direct testimony that Evergy Metro and Evergy West used a software model called PROMOD that, "…performs a security constrained unit commitment and co-optimized economic dispatch to generate Locational Marginal Prices ("LMP") at the nodal level, similar to how ISOs and RTOs set schedules and determine prices."[2]

Q. Within SPP, what is a node?

A. SPP defines a node as a, "specific electrical bus location in the SPP [Energy Management System] transmission model for which a settlement price is calculated."[3]

Q. What types of nodes are used in Staff's production cost models?

A. Staff's production cost models include generating nodes and load nodes. Energy generated at power plants is sold at the market prices associated with each power plant's generating node while the energy needed to satisfy customer demand is purchased at the market price associated with the load node.

Q. How do the average load node market prices used by Evergy Metro, Evergy West, and Staff compare in their respective direct testimonies?

[1] Case Nos. ER-2022-0129/0130, Direct Testimony of Saeid R. Dindarloo, Ph.D., P.E., page 4, lines 11-13.
[2] Case Nos. ER-2022-0129/0130, Direct Testimony of Eric T. Peterson, page 3, lines 17-20.
[3] https://www.spp.org/glossary/, Retrieved 07/08/22.

Q. Evergy Metro and Evergy West had lower average load node market prices than Staff. In Case No. ER-2022-0129, the Evergy Metro average load node market price was ** [redacted] ** vs. ** [redacted] ** for Staff. In Case No. ER-2022-0130, the Evergy West average load node market price was ** [redacted] ** vs. ** [redacted] ** for Staff.

Q. What were the actual average market prices for SPP in 2019, 2020, and 2021?

A. The average day-ahead market price for all of SPP averaged $22.04/MWh in 2019.[4] That value dropped to $17.69/MWh in 2020[5] and then increased to $27/MWh in 2021.[6]

Q. Do the average annual market prices discussed by the SPP Market Monitor in its reports match the market prices used by Staff, Evergy Metro, or Evergy West in these cases?

A. No, and I would not expect them to. Evergy Metro and Evergy West are SPP market participants, but do not represent the entirety of the market. Differences in price at the many nodes defined within SPP can be attributed to regional variations, transmission constraints, and a whole host of other factors. Within this testimony, I use the SPP Market Monitor's average prices for illustrative purposes to demonstrate large scale trends within the SPP market.

Q. What were the SPP Market Monitor's explanations for the decrease in average market price between 2019 and 2020 and then the significant increase between 2020 and 2021?

[4] "State of the Market 2019," SPP Market Monitoring Unit, page 131.
[5] "State of the Market 2020," SPP Market Monitoring Unit, page 122.
[6] "State of the Market 2021," SPP Market Monitoring Unit, page 143. Note: this value removes the effects of the high prices experienced during February 2021 because of Winter Storm Uri. Including the abnormally high market prices for February 2021 would increase the average 2021 day-ahead market price to be $63/MWh.

A. The SPP Market Monitor stated that lower natural gas prices, lower demand, and increasing wind penetration were large contributors to the average market price decrease between 2019 and 2020.[7] The increase in average market price between 2020 and 2021 was attributed to the February winter weather event and to an increase in the prices for natural gas and coal.[8]

Q. Do trends in natural gas price generally correspond with the trends in market prices within SPP?

A. Yes. The SPP Market Monitor recently stated that, "Historically, gas and electricity prices have been highly correlated in the SPP market. Workably competitive electricity markets are expected to see highly correlated gas costs and electricity prices in general."[9] However, Staff does recognize that natural-gas fired generation is not always the price-setting marginal unit within SPP.

Q. How did the average price for natural gas change between 2019 and 2021?

A. The average Henry Hub natural gas spot price was $2.56/mmBTU in 2019, $2.03/mmBTU in 2020, and $3.89/mmBTU in 2021[10].

Q. Do Evergy Metro and Evergy West buy their natural gas at the Henry Hub natural gas spot price?

A. No, they do not. For the purpose of this testimony, I am using the Henry Hub natural gas spot price to show general trends within the natural gas market for North America.

[7] "State of the Market 2020," SPP Market Monitoring Unit, page 122.
[8] "State of the Market 2021," SPP Market Monitoring Unit, page 144.
[9] "State of the Market, Winter 2022," SPP Market Monitoring Unit, page 28
[10] The annual Henry Hub natural gas spot price for 2021 reported here includes the effects of the high prices experienced in February 2021. Removing February 2021 from the calculation would result in an average price of approximately $3.75/mmBTU.

This testimony contains no recommendations concerning the price paid for natural gas by Evergy Metro or Evergy West.

Q. What have natural gas prices looked like so far in 2022?

A. The average Henry Hub natural gas spot prices in 2022 have remained high and have even briefly exceeded $9.00/mmBTU. From January 1, 2022 through June 14, 2022, the average price has been close to $6.00/mmBTU.

Q. Based on the natural gas prices seen so far in 2022, what would you expect the effects on average SPP market prices to be?

A. If natural gas prices remain at or above what was experienced in 2021, I expect the average SPP market price to be greater than or equal to what was calculated in 2021.

Q. Do the market prices calculated by Evergy Metro and Evergy West appear to be in line with the current market conditions as they relate to natural gas prices?

A. No. The market prices used by Evergy Metro and Evergy West in the production cost models that they filed in their direct testimony appear to be too low given the current state of the market and the price of natural gas.

Q. What are the potential results of using low market prices in a production cost model?

A. In general, low market prices will make higher cost generation resources less likely to dispatch in a production cost model. The resources that are dispatched will receive less revenue for the energy that is sold into the market. Low market prices will also decrease the average cost of the energy that is purchased to satisfy customer load. The combination of these effects can lead to a lower total variable fuel and purchased power expense and a lower total revenue requirement.

Q. How did Staff's variable fuel and purchased power expenses differ from those calculated by Evergy Metro and Evergy West?

A. In its direct filings, Staff's variable fuel and purchased power expenses[11,12] were higher than those calculated by Evergy Metro and Evergy West.[13]

Q. Does it make sense that Staff's variable fuel and purchased power expenses would be higher than those calculated by Evergy Metro and Evergy West?

A. Yes. Staff filed its direct testimony five months after Evergy Metro and Evergy West filed their direct testimony. Staff was able to update some of its assumptions with known and measurable data that Evergy Metro and Evergy West would not have had access to when they filed.

Q. Why could filing five months after Evergy Metro and Evergy West cause Staff's variable fuel and purchased power expense to be higher?

A. The market is currently experiencing a period of elevated prices, both for energy and for fuel. More recent data will capture more of those higher energy and fuel prices. Incorporating that data with the higher energy and fuel prices into the assumptions used for Staff's production cost models will tend to increase the calculated variable fuel and purchased power expenses.

Q. What are your concerns about Evergy Metro and Evergy West using low market prices in their production cost modeling?

A. During a period of elevated energy and fuel prices, using lower than appropriate market prices for production cost modeling can lead to a less accurate calculation of variable

[11] Case Nos. ER-2022-0129/0130, Direct Testimony of Shawn E. Lange, P.E.
[12] Case Nos. ER-2022-0129/0130, Direct Testimony of Charles T. Poston, P.E.
[13] Case Nos. ER-2022-0129/0130, Direct Testimony of Eric T. Peterson.

fuel and purchased power expenses and total revenue requirement. It is Staff's intention to calculate as accurately as possible a result from its production cost model in order to most properly recommend its revenue requirement and to calculate a reasonable base factor for the fuel adjustment clause ("FAC").

Q. Does Staff have any plans to revisit the market price inputs used in its production cost models?

A. Yes, it does. Market prices are among the inputs that Staff will review as a part of the true-up testimony that it intends to file in these cases.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2022-0129
In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2022-0130

AFFIDAVIT OF CHARLES T. POSTON, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW CHARLES T. POSTON, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Charles T. Poston, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

CHARLES T. POSTON, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 6th day of July, 2022.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

Notary Public